What is claimed is:

1. An integrated process for compounding a catalyst containing silicone rubber composition comprising the steps of

A) blending a composition comprising:

i) 100 parts by weight of a high consistency polydiorganosiloxane,

ii) about 10 to 80 parts by weight of a treated or untreated reinforcing silica filler,

and when said reinforcing filler is untreated

iii) about 10 to 45 weight percent, based on the weight of the reinforcing silica filler, of a treating agent for the reinforcing silica filler

by introducing the filler into a mixer (1) and maintaining said filler in a highly turbulent, fluidized state at a temperature of from 80°C to about 350°C, maintaining the temperature and the filler in the highly turbulent fluidized state while introducing the polydiorganosiloxane and subjecting the resulting mixture to a shearing force sufficient to achieve an average particle size of from 1 to 1000 microns thereby forming a flowable organopolysiloxane powder composition, and when required, introducing said treating agent into the mixer (1) prior to, during, or after addition of the polydiorganosiloxane,

B) directly transferring the flowable organopolysiloxane powder composition to a bulk solids cooling device (7) and facilitating accelerated bulk cooling thereof to a temperature below a temperature selected from the group consisting of (i) the decomposition temperature and (ii) the activation temperature of a catalyst added in step (D),

C) feeding the bulk cooled flowable organopolysiloxane powder composition to a massing apparatus (8) and massing the organopolysiloxane composition therein at a temperature selected from the group consisting of (i) below the decomposition temperature and (ii) the activation temperature of a catalyst added in step (D),

D) adding a catalytic amount of a catalyst to the organopolysiloxane composition either prior to, during, or after step (C) at a temperature selected from the group consisting of (i) below the decomposition temperature and (ii) the activation temperature of the catalyst.

2. An integrated process according to Claim 1, where the high consistency polydiorganosiloxane has a viscosity within a range of about 6×10^4 to 1×10^8 mPa·s at 25°C.

3. An integrated process according to Claim 1 wherein the high consistency polydiorganosiloxane comprises one or more of trimethylsiloxy end-capped polydimethylsiloxane, vinyldimethylsiloxy end-capped polydimethylsiloxane, vinyldimethylsiloxy end-capped polydimethyl/vinylmethylsiloxane copolymer, and trimethylsiloxy end-capped polydimethyl/vinylmethylsiloxane copolymer.

4. An integrated process according to Claim 1, where the reinforcing silica filler is a fumed silica having a surface area within a range of about 75 m^2/g to 1000 m^2/g.

5. An integrated process according to claim 1 wherein the reinforcing silica filler comprises from 20 to 50 parts by weight per 100 parts by weight of the high consistency polydioganosiloxane.

6. An integrated process according to claim 1 where the treating agent is a low molecular weight hydroxy end-blocked polydimethylsiloxane fluid.

7. An integrated process according to claim 1 wherein the treating agent comprises about 15 to 35 weight percent, based on the weight of the reinforcing silica filler.

8. An integrated process according to claim 1 wherein in step (A) the temperature is within a range of about 90°C to 180°C.

9. An integrated process in accordance with Claim 1 wherein the catalyst is an organoperoxide catalyst.

10. An integrated process in accordance with claim 9 wherein the organoperoxide catalyst comprises 2,4-dichlorobenzoyl peroxide and/or 2,5-bis(tertiarybutyl peroxy)-2,5-dimethylhexane.

11. An integrated process according to claim 9 wherein the organic peroxide comprises about 0.1 to 10 weight percent, based on the weight of the composition.

12. An integrated process according to claim 9 wherein the peroxide catalyst is added in a mixing step conducted after step (C).

13. An integrated process according to claim 1 wherein the catalyst is a platinum catalyst in combination with a polyorganosiloxane having at least two silicon-bonded hydrogen atoms per molecule.

14. An integrated process according to Claim 1 wherein the accelerated bulk cooling of Step B is facilitated using one or more belt coolers, jacketed mixers, fluidized mixers through which cooling air may be blown, and flow-through apparatus having one or more cooling elements positioned therein (7).

15. An integrated process according claim 1 wherein the massing apparatus (8) is an extruder.

16. An integrated process in accordance with Claim 1 wherein the flowable powder passes through a means adapted to eliminate or reduce lumps, large particles and agglomerates (6) prior to bulk cooling.

17. Apparatus for the integrated process in accordance with claim 1 comprising a high-shear mixer (1), a bulk solids cooling device (7) and a massing apparatus (8), said mixer (1) having a plurality of inlets, an outlet, a motor (2) and one or more high shear blades, said motor (2) being adapted to provide rotational energy to said high shear blades contained therein, and thereby fluidise powder introduced into the mixer (1) through one or more of said inlets (3,5), the mixer (1) is additionally adapted to receive a high viscosity, polymer through a polymer feed port (4), for mixing with said fluidized powder to form a flowable powder, and a treating agent through one or more of said inlets (3,5), said bulk solids cooling device (7) has an inlet and an outlet, the bulk solids cooling device inlet is adapted to receive flowable powder from said mixer, which powder is cooled in the cooler and subsequently transported from said bulk powder cooler exit to said massing apparatus (8) which is adapted to mass any powder which has been cooled in said bulk solids cooling device (7), said apparatus being adapted to enable the introduction of one or more additives into free flowing powder prepared in mixer (1) before, during or after cooling.

18. Apparatus in accordance with claim 17 wherein a means adapted to eliminate or reduce lumps, large particles and/or agglomerates (6) is situated between the mixer outlet and the bulk powder cooler inlet.

19. Apparatus in accordance with claim 17 wherein the massing apparatus (8) is an extruder.